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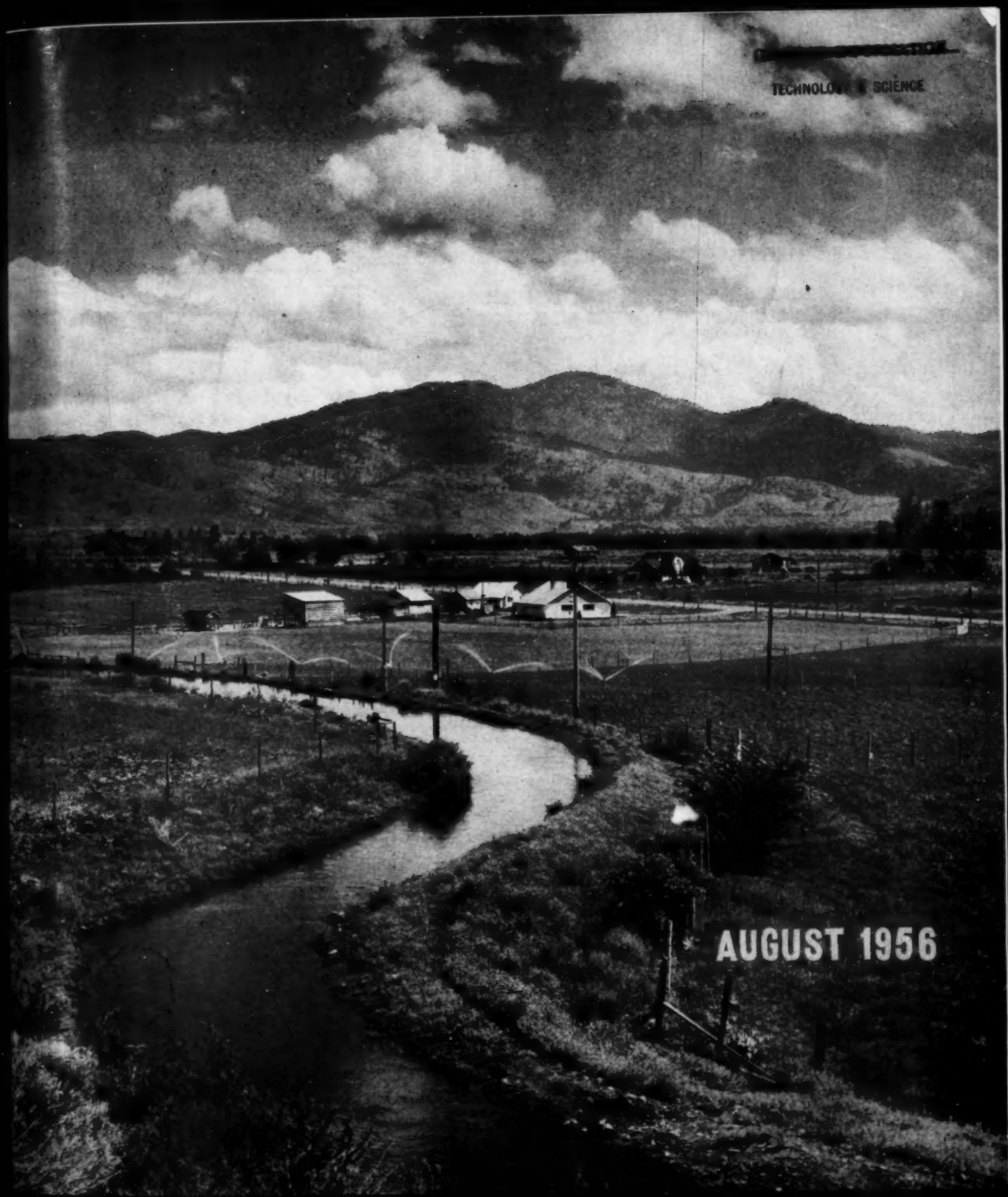

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SOIL CONSERVATION

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SOIL CONSERVATION

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ADMINISTRATOR, SOIL CONSERVATION SERVICE

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★ THIS MONTH ★

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INVESTMENT IN PINE WOODLAND.—Jack White, a cooperator with the West Georgia Soil Conservation District, bought 14 acres of eroded land in Meriwether County for $295 in 1937. He planted an acre of slash pine seedlings during the latter part of December that year. The planting was on a cottonfield that had failed to make a satisfactory crop. The field is class II land—Cecil soil.

During the fall of 1951, White noticed that about 5 percent of his trees looked sick. They had knots on the trunks and limbs. He marked the diseased and crooked trees and sold them for pulpwood. From the 1 acre 7.5 units of pulpwood were cut that brought $26.25.

In November 1955 the Soil Conservation Service talked to White about D+6 thinning, and advised him that the slash pine on the acre should be thinned. Again White marked his trees, this time on a D+6 thinning basis. In December 1955 he sold 7.8 units of pulpwood for $27.30. White now values the stand of slash pine on this 1 acre at $150.

On land that cost $27.85 per acre in 1937, White has receiced $53.55 in 17 years. or $3.15 per acre per year. He still has a crop that he values at $150 and his original investment in the land.

FRONT COVER—Sprinkler irrigation of alfalfa and bromegrass pastures near Twisp, Wash.

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Starting From Scratch

Eight old farms are combined into one to make the new University of Wisconsin experimental farm with a new conservation plan

By DOUGLAS D. SORENSON

THE long sweeping curves of contour strips and terraces will replace the patchwork pattern of rectangular fields on eight adjoining farms in the Columbia County Soil Conservation District of Wisconsin.

The farms, which cover 1,170 acres, have already lost their individual identities and have been combined into one unit which will be the new University of Wisconsin experimental farm. Eventually, the University Farm may cover some 2,500 acres.

The new farm is about 20 miles north of Madison on the fertile, rolling Arlington prairie. It will take the place of the old Hill farms which will become Madison residential areas.

The conservation-minded experiment station staff recognized the opportunity for conservation planning "starting from scratch" on the new area. R. K. Froker experiment station director, made an agreement with Columbia County Soil Conservation District officials to cooperate in the conservation plan for the farm. Even before the University actually had possession of the area, farm planning began.

Harold Krueger, Soil Conservation Service representative of the Columbia County Soil Conservation District, surveyed the area and prepared a land use capability map as the first step.

R. J. Muckenhirn, assistant station director, and V. W. Matthias, farm manager, with Krueger used the map to plan the best use of every acre of the new farm.

Intensive cropping in contour strips or terraced fields is planned for the gently sloping parts of the farm. The more rolling slopes will be in grass most of the time and used for pasture and dairy experiments. Wildlife will find permanent cover in a few acres of rough land which will be undisturbed by the plow or grazing farm animals.

After the planning of land use, actual facelifting of the 1,170 acres began. Line fences were torn down and old field boundaries eliminated before construction equipment moved in. Strips and terraces were laid out to follow nature's contours across old fields and fence lines. Construction equipment came from the Columbia County Soil Conservation District and was loaned to the University at cost, under the same plan offered to farmers in the district.

The principals in planning the conservation work for the University of Wisconsin experimental farm are shown here (left to right): V. W. Matthias, farm manager; R. J. Muckenhirn, assistant director of the Experiment Station; Harold Krueger, SCS work unit conservationist; and Jack Densmore, SCS state conservationist.

Note.—The author is a graduate student in the Department of Agricultural Journalism, University of Wisconsin, Madison, Wis.

One of the earth movers used in building 7 miles of terraces, diversions, and waterways on the 1,170-acre University of Wisconsin experimental farm.

By the fall of 1955, patrol graders and earth-movers had carved out almost 7 miles of terraces, diversions, and grass waterways. This was more than all the rest of the terracing done in the district that year. Conservation construction was planned so that when adjoining land is added to the experimental farm, it can become a part of the present erosion control plan.

The new farm is located in parts of three townships in Columbia County and Dane County Soil Conservation Districts. The Columbia district did all the conservation work in both counties.

Harold Krueger inspects a newly completed terrace that cuts across old fence lines that used to separate the eight farms now combined into one unit.

Moving of livestock and turkeys to the farm began this spring, and University farm crews are already busy with field work for 1956. This year they'll plant nearly 500 acres of corn and 400 acres of oats on the level land and terraced slopes. Hay and pasture will make up another 200 acres, and the rest of the tillable land will be planted to soybeans to build up soil fertility.

There's other important work to be done this year before the farm will be ready for full-scale operation. Grass waterways have been seeded, and an extensive weed control program is underway.

By 1957 a brand new farm will be operating with the best known soil, water, and wildlife conservation practices.

REACHES BEYOND THE SCHOOL

A Vo-Ag teacher not only teaches soil conservation to his high school students, but also preaches it to everyone in his own and neighboring counties, and practices conservation on his own farm.

By CHARLES B. S. SLATON

CHARLES HESS believes in soil conservation. He teaches it, he preaches it, and he practices it.

He teaches it in his vocational agriculture high school classes at Mansfield, Pa. He's the school's supervisor of agriculture. He preaches it to anyone who will listen, and is often invited to talk before various groups. He practices it on his 60-acre farm.

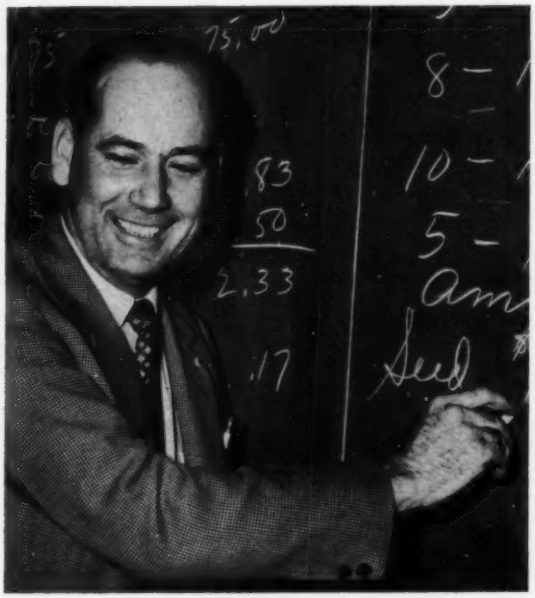
Hess has been interested in farming most of his life. He spent his summers on a farm till he was 8 years old. Then his family moved to the farm. As soon as they were old enough, Charles and a brother took over operation of the farm.

Charles continued his interest in farming at college. He studied dairying, then changed to agricultural education at Pennsylvania State

Note.—The author is work unit conservationist Soil Conservationist Soil Conservation Service, Wellsboro, Pa.

College where he graduated in 1933. Without delay he got into vocational agricultural teaching.

Hess says he became aware of conservation as a distinct way of farming in 1939. That was the year he started a vocational agriculture department in the Scott Township High School, Lackawanna County, Pa. One day he went out to talk to a farmer, Harold Snyder. He found Ted Hebel, Soil Conservation Service technician, talking with Snyder about a conservation program for his farm. He noted what Hebel said about conservation.



Charles Hess

"I was greatly impressed by Snyder's attitude," Hess recalls. "After outlining the conservation practices that would make up his program, he said, 'These practices might not help me but I'll be able to pass on a better farm.' I don't think I'll ever forget that noble thought."

No radical change came over Charles Hess. But from then on he was more aware of soil and water conservation than ever before. When he went to Mansfield High School in 1941, he took steps to get acquainted with Soil Conservation Service workers and the county agent. He went out on the farms with these men. The SCS men showed him how to apply certain conservation measures. Then Hess started taking his students out on the farms. He showed them how erosion destroyed the land, how conservation saved it. He showed them how conservation measures got the most use out of water. Hess told his students about differences in soils and classes of land out on the farms where they could see for themselves.

He weaves soil and water conservation into all his teaching. All phases of the whole conservation program are brought naturally into his courses. "Sometimes farmers turn to conservation farming because of the influence of their sons," he says. "The boys learn about it in vo-ag classes. They see the need and the value of it. They keep on talking about it at home until their parents become interested."

Hess has been president of the Cory Creek Watershed Association since it was formed in 1953. (Cory Creek is a pilot watershed project.) He helps to prepare exhibits on conservation for the county fair each year. He talks on conservation regularly before such groups as the Mansfield Businessmen's Association, the Pennsylvania State Association of Soil Conservation District Directors, the Potter County Soil Conservation District Forum, the Grange, the Cowanesque River Watershed Association, and the Future Farmers of America.

He is an honorary Keystone Farmer. His vo-ag boys have won national FFA awards, as well as local and state honors.

Hess was master of the student subordinate Grange while he was in college. He is a past president of both the Tioga County and the State Agricultural Teachers Association. In 1953 he formed the Mansfield Young Farmers Association. In all of these he helps his Tioga County Soil Conservation District and all other districts by arousing interest in the conservation of soil and water resources.

AUSTRALIA FINDS CONSERVATION PAYS.—It is quite feasible to double the output from crops and stock and farm timber at low capital cost, from all the eroding arable farms in the western slopes of New South Wales by land use, planning, and soil conservation farming. We know this can be done because it has been done on so many representative farms from the Victorian to the Queensland border.

—L. G. KALESKI
Chief Soil Conservationist
New South Wales

Soil Nitrogen Balance Sheets

No. 16

This is the sixteenth of a series of articles to appear from time to time in explanation of the various phases of research being conducted by the Department of Agriculture on problems of soil and water conservation.

By FRANKLIN E. ALLISON

WHEN fertilizer nitrogen is added to cultivated soils in the humid region of the United States usually less than 50 percent is recovered in the harvested crop. Low recoveries are due in part to the nitrogen left in the roots and other unharvested portions of the crop. But even a second crop, planted the following year, will not appreciably increase the recovery figures unless drought prevented the satisfactory utilization of the nitrogen added the previous year.

Many experiments have shown that if the added nitrogen is in the form of animal manures the recovery in the first crop is not likely to exceed 25 percent. In this case there is a residual effect because much of the nitrogen was not changed to nitrates the first year. But even after several years of cropping one cannot expect to obtain more than a third of the manure nitrogen in the harvested crops.

The recoveries of added nitrogen applied to crops in the drier regions, where leaching is not a factor, are probably higher than those given above but present information is too limited to justify a positive statement to that effect.

Research workers in the Agricultural Research Service have been trying to find out more quantitatively what happens to the "lost" nitrogen. If soil nitrogen balance sheets don't balance, what is the reason? In attempting to answer this question it is necessary to consider all of the channels by which nitrogen gets into the soil and those by which it leaves.

Note.—The author is soil scientist, soil and water conservation research branch, Agricultural Research Service, Beltsville, Md.

The main sources of crop nitrogen, apart from soil organic matter, are rainfall, irrigation water, seeds, animal manures, crop residues, fertilizers, legumes, and free-living nitrogen-fixing microorganisms. In any given experiment, specifically designed for the purpose, all of these nitrogen sources, except the last, can be determined or estimated rather accurately. Nitrogen fixation by nonsymbiotic microorganisms may vary from nothing to as much as 40 pounds per acre annually. The quantity is usually small; in fact, it can't be measured accurately except by the use of tracer techniques, and then only under laboratory or greenhouse conditions.

The main sources of nitrogen loss, apart from harvested crops, are erosion, leaching, and gaseous diffusion. Experimentally, erosion can be eliminated; and by the use of tanks provided with drainage (lysimeters) the leaching losses can be determined accurately. Values so obtained are likely to be too high, though, because water penetration into soils kept in tanks is probably greater than in field soils, especially if the topography is rolling. Although such a limitation needs to be kept in mind it is of minor importance in nitrogen balance studies.

A summation of such lysimeter data shows that of the nitrogen not recovered in the crop, the larger part escapes from the soil by leaching. The quantity so lost varies widely with the crop and soil. Another considerable portion of the added nitrogen escapes as gases. In the experiments studied, an average of about 20 percent of the nitrogen added to cropped soils was not accounted for; presumably most of it escaped as gases. The corresponding loss from uncropped soils was about 12 percent. The losses were, of course, even larger if much nonsymbiotic nitrogen fixation occurred.

These studies emphasize that low recoveries of nitrogen in the crop were obtained where large additions of nitrogen were made, where the soils were very sandy, and where the crop was not adequate to assimilate most of the fertilizer nitrogen soon after its addition to the soil. The amount of the unaccounted for nitro-

gen was approximately the same whether the nitrogen was added as nitrate, ammonia, or high grade organic materials.

Recent experiments in several laboratories have shown clearly the chemical nature of the gaseous forms of nitrogen that are lost from soils, and the soil conditions that favor such losses. These gaseous forms of nitrogen are chiefly ammonia, molecular nitrogen, and nitrous oxide.

Ammonia is likely to escape from soil if it is slightly or strongly alkaline, but not if it is acid. Such losses are greater if the ammonia is near the surface and the soil is allowed to dry. Ammonia losses increase with soil temperature and are larger from sandy than from clay soils. Ammonia may also escape readily if nitrogenous organic materials are allowed to decay on or near the soil surface. Considerable volatilization of ammonia may occur from animal manures if they are spread on the soil surface and not incorporated into the soil. The loss is not appreciable unless the nitrogen content of the dry matter is above 2 percent.

Both molecular nitrogen and nitrous oxide may be produced in considerable quantity as a result of the activities of denitrifying bacteria. These common soil organisms, which ordinarily obtain their oxygen supply from the air, can also take it from nitrites or nitrates if the air supply is restricted. In the process they liberate free nitrogen gas and also nitrous oxide as by-products. Deficient soil aeration is most likely to result from temporary waterlogging or heavy applications of organic matter.

Most losses of gaseous nitrogen from soils are believed to be the result of this bacterial denitrification process. The liberation of both nitrogen gas and nitrous oxide can begin to occur within a few hours in warm moist soils if the oxygen supply becomes deficient when nitrates are present. Some losses of these two

Experiments show that in a field like this the sod crops use a considerably higher percentage of the nitrogen fertilizer applied than do the cultivated crops.

gases may also occur as a result of chemical reactions but work done in the Agricultural Research Service laboratories shows that such losses are small.

A few organic substances such as methylamine and trimethylamine, hydrocyanic acid, and nicotine are known to escape from growing plants but these losses are insignificant.

Little emphasis has been placed on loss of nitrogen through erosion but these losses may be as great as those due to leaching if proper control measures are not taken. Eroded soil contains considerably more nitrogen than the soil left behind due to its higher clay and organic matter content.

These nitrogen balance studies emphasize that in order to obtain a high efficiency in the use of nitrogenous fertilizers it is desirable to apply the nitrogen as short a time as possible before the crop is ready to assimilate it, thereby reducing the chances of losses both by leaching and by denitrification. Ammonia-nitrogen, if applied to alkaline soils, should be incorporated with them. Where nitrogen is applied to a sod the recovery in the crop may be considerably above the 50 percent mentioned since a grass sod assimilates available nitrogen very rapidly.

Any chemical nitrogen not utilized the season that it is applied will, ordinarily, under humid conditions be almost completely removed before the second season arrives. It can be held in the soil only by supplying sufficient quantities of carbonaceous materials to enable the soil microorganisms to tieup the nitrogen in an organic form. Even if so fixed, the fixation will be temporary unless the carbon level is permanately raised. This can be done by shifting from cultivated crops to sod crops but it is difficult to do otherwise.

Range Production Doubled

A Southwestern rancher bought an overgrazed range and by decreasing the number of cows, installing conservation measures, and practicing good grazing management almost doubled the beef production.

By PAUL E. ELLSWORTH
and KEITH J. DAMPF

IN August 1945, when Buford Slover bought a 24-section ranch, 60 miles southwest of Lordsburg, N. Mex., the grass was short and the cattle were poor—there were no permanent waters on the place. There were four pastures; all fences, including the outside boundary fences, were in poor condition. The grass was in poor condition at that time, but had good potential for improvement with good grazing management. Slover says he tried to see beyond the short grass and lean cattle to fat cattle on luxuriant grass; to making the ranch pay better—and he has seen the vision come true.

Slover's first job, when he bought the ranch, was to take inventory of the grass and cattle. A trip to Soil Conservation Service headquarters at Lordsburg brought help from SCS technicians in making a range forage inventory.

Being an expert at watching cattle to see when they get enough feed, it was easy to become expert at watching grass. The poor condition of the range told Slover that there were too many cattle on the ranch. He could see that there was no use in having 2 cows where there was only grass for 1. After taking inventory of his grass, he cut the number of breeding cows from 300 to 250 head.

The 300 cows on the ranch had 185 calves, about 62 percent of the cows having calves in 1945. The cows averaged 900 pounds, and at marketing time, (November 1, 1945) the calves averaged 370 pounds each. In 1953, with 250 cows, the cows averaged 1,026 pounds each and 97 percent of them produced calves. These

Note.—The authors are, respectively, work unit conservationist and farm planner, Soil Conservation Service, Lordsburg, N. Mex.

calves averaged 491 pounds each on November 1. In 1955, with 250 cows a 97 percent calf crop was again produced, averaging 470 pounds per calf.

Total weights of calves produced in 1945 was 68,450 pounds; in 1953, 119,313 pounds; and in 1955, 116,761 pounds. This meant an increase of about 70 percent in the market weight of calves produced on the ranch.

"It is not the number of cattle that counts," says Slover, "It is the number of pounds of beef produced."

Slover used a system of deferred grazing, where one part of the ranch was grazed during the growing season, leaving the remainder to rest during this period. The following year another part of the ranch would be grazed during the growing season.

"A cow will select the more palatable grasses to eat if you let her," says Slover. "By grazing only a part of the ranch during the growing season the cow must eat some of the less palatable grasses, while the remainder of the ranch is getting a rest."

To practice the system of deferred grazing and control extra fencing was needed. Seven miles of new division fences were built to increase the number of pastures from 4 to 9.

To properly utilize the available grass, sufficient water was needed in each pasture. Four

Buford Slover and Paul Ellsworth examine the grass in one of Slover's pastures.

wells were drilled and equipped with storage tanks with steel rims and concrete bottoms. Also, Slover constructed 14 earthen dams and 18 masonry or concrete dams to form stock water ponds and reservoirs. The masonry or concrete dams are located in the steep, rocky parts of the ranch.

In addition, water was piped from a masonry dam 1½ miles to the headquarters and on to a pasture ¾ mile beyond.

Slover considers fencing and water development as grazing management practices, since they are necessary to proper distribution and control of the cattle.

One of the 14 ponds on the Slover ranch.

"The extra watering places were needed so the cattle wouldn't have to walk themselves to death going to and from water. My cattle do not have to walk more than a mile to water anywhere on the ranch," Slover stated. "A rancher needs water and fences to control and guide his cattle so that all of the range can be utilized and the use can be controlled on all of the range. I wouldn't be a very good rancher unless I knew more than a cow."

Erosion control dams built by Slover have aided in speeding up the revegetation of bare spots on the ranch. Slover's knowledge of cattle has helped him to control grazing and to keep the animals in vigorous condition at all times. To do this, he knows that it is essential that he have forage at all times for the cattle.

Being a good cattleman, Slover observes the condition of his cattle, and attributes their condition largely to the feed they are eating. If the condition of the stock is not satisfactory then he assumes the feed is not satisfactory, so he adjusts the management of the stock to give the improvement needed in the forage.

"An overgrazed area," explains Slover, "has very little stubble on it. The grass makes little growth. If the grass is short, the roots are also short, as the top has to manufacture the food from the water and elements that the plant gets from the soil. When the roots are poorly developed they cannot pick up the deeper moisture in the soil. Grass eaten down to the ground has no depth to its roots, it is weak, and noxious or worthless plants invade the pasture. With a good grass cover the ground is cooler and less water is lost from evaporation. The grass cover also holds the rainwater longer and gives the ground more time to soak up the water."

Slover's objective, when he bought the ranch, was to increase and maintain his income at a high level. He felt that the way to do this was to put conservation on the land to increase the forage production, and finally this would result in more beef production and thereby increase his income.

The weather was dry, the land was steep, the grass cover was thin. The weather, the soil, and the topography could not be changed. To increase the grass it was necessary to increase the amount of water taken into the soil and decrease the runoff. The logical way to do this was to adjust the stocking rate each year to the amount of grass available and give the grass a chance to make a better cover on the land.

Slover had found that well fed cattle are thriving, profitable cattle. This interest in contented cows with full paunches led to his interest in feed to keep them that way, and further to the improvement of the range condition and sustained grass yields.

In managing grass, Slover's idea is to take some and leave some. He says, "I try to keep a little of the old grass ahead, so that when the dry years come along I won't get caught in too bad shape. I fought the drought years by keeping the number of cattle down to where the place would run them without me buying too much feed."

This is not a story of rags to riches, nor a get rich quick scheme of overnight miracles. It is, however, a revelation of what a rancher could and did do with a rundown ranch that had poor grass and skinny cattle.

SELECTIVE CUTTING OF WOODLANDS INCREASES INCOME.—Mack L. Gill, a retired hardware salesman, now 72 years old, has lived for several years on his 1,067-acre tree and cattle farm, in Lincoln Parish, La. Part of his farm has been owned by the family for 135 years and part was purchased recently. The Gill farm has about 220 acres of improved pasture and 847 acres of woodland. The woodland occupies about 767 acres of uneven-age loblolly and shortleaf pine and about 80 acres of creek bottom land that has loblolly pine mixed with oak, gum, and cypress.

The past 9 years Gill has managed his woodland as a crop. He selectively cuts 100 to 200 acres each year. His woodland is divided into 5 compartments to correspond with the cutting cycle. Each compartment contains about 170 acres. Compartments "A"' and "B" were selectively cut for the second time in 1954, and 1955. The products harvested were poles, pine and hardwood saw logs, and pulpwood. The total amount received from stumpage sales the past 2 years averaged $4,000 per year.

Gill stated, "I am well pleased with my woodland conservation compartment plan. It gives me a definite area to work each year. My plan, based on D+6 spacing plus one crop tree per acre per year, will allow me a selective cut each year from now on. Also, I expect my son to take over eventually and this plan will make it easier for him."

The Louisiana Tree Farm System awarded Gill a tree farm certificate and sign in 1952 in recognition of the excellent woodland protection and management program that he has been observing for many years.

Roses on the Contour

A nurseryman and soil conservation district director practices what he preaches by using good soil and water conservation practices

By JOHN O. DEAN

WALT MATLIN has been telling his neighbors in the west end of Riverside and San Bernardino Counties, Calif., that soil and water conservation is very important. He acted as chairman of the organizing committee, when the West End Soil Conservation District was being organized. He has been a director of the district ever since it was organized. Walt practices what he preaches on his own land and upon land that he leases. He says that it only makes sense because soil and water conservation pays.

The Matlin Nursery which specializes in growing hybrid tea roses, has done an outstanding job of soil and water conservation on leased land in the Riverside-Corona Soil Conservation District. From 60 to 70 acres of rose plants are harvested and sold each year. Altogether, more than 200 acres are devoted to the rose nursery, because the roses must be rotated to avoid soil infestations.

All of the nursery is on hillside land. Every furrow on the property is on a grade contour.

The curved pattern of planting makes irrigation easy and efficient. Erosion is reduced to a minimum and the roses are producing lush growth. The curved rows of colorful roses make a beautiful sight. They are equally as beautiful on the nursery as they eventually will be in some fine rose garden.

Note.—The author is area conservationist, Soil Conservation Service, Riverside, Calif.

Contour planted roses on the Matlin Nursery.

Cooperation on a Watershed

The neighbors of Smock Valley, Wis., find their small watershed improvement project an adequate substitute for the oldtime threshing ring.

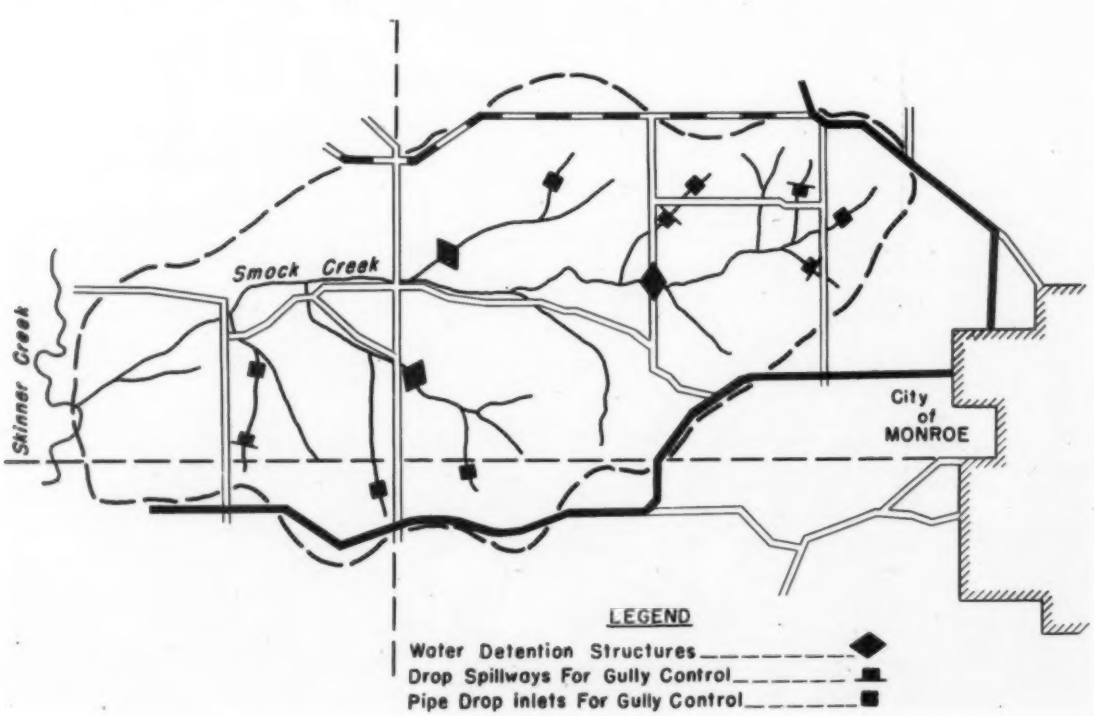
By A. B. FOSTER

"PEOPLE have to see to believe. This is what makes neighboring so effective in getting soil conservation work on the land." Ken Digman, young farmer in Green County, Wis., is talking. Ken was one of the leaders in organizing the Smock Valley Watershed Association, a going concern in the Green County Soil Conservation District.

"A neighbor can show results, where a government technician may not be able to convince a farmer that conservation farming is best," Ken says. "'How will it work on my farm?' is the first thing most farmers want to know, and a neighbor is the one who can tell him."

"We need technical help, make no mistake about that," Ken continued. "You can't make water run uphill. We need technicians who can run transits and levels as well as help with making complete farm conservation plans. But there's a job that local people have to do themselves. What makes me feel good is to see these other fellows take hold of the thing and make it go—fellows who were a little reluctant at first."

Smock Valley is the name the people have given to the 5,500-acre watershed just west of Monroe, Wis., where 52 farms drain to a common stream, the Smock. It borders on U. S. Highway 11 on the south and is about 5 miles long and 2 miles wide. Sheet and gully erosion on the uplands and too much water on the lowlands are the main problems.



Smock Creek watershed.

Ken Digman and son, Aaron, ear-marking a new litter of pigs.

Tommy Schuetz, another young farmer, is now president of the watershed association. Like Digman, Tommy believes that association makes for cooperation with neighbors. He pointed out that the old threshing ring is gone, people no longer butcher together, so neighbors have tended to become strangers to each other. Watershed association meetings are taking the place of the old threshing ring.

The association was organized in 1952. At first, only men came to the meetings. Then the women came but had their own meeting in another room. Now they meet together and bring the whole family. Even the kids ask, "Is this watershed week?" when Friday night rolls around.

It all started in 1951 with a neighbor group meeting where one farmer invited his neighbors into his home to talk over soil erosion problems. Tommy Schuetz attended that meeting. Ken Digman was the leader of the group.

"Those group meetings helped straighten me out," Tom said. He was referring to a soil conservation program and how he could live with it. For example, how could he get enough pasture for his dairy herd if he put the cropland in strips. Nick Calabresa, local Soil Conservation Service technician, came to these early meetings and explained how a crop rotation could be arranged so that fields could be pastured without a lot of fencing problems. "We got acquainted with Nick and got confidence in him," Tommy pointed out. Don Digman, brother of Ken, Emmanual Fuchs, Bill Leopold, Cy Amacher, Roy Block, Bill, Walter and Albert Schuetz, Ernest Steinman, Tom and Clarence Steiner were in the original neighbor group meeting.

After 5 of these neighbor meetings, where an average of 15 farmers from various parts of the watershed met, conservation plans were put in practice. It wasn't long until some of the farmers began to see the advantages of the conservation work. It began to show up in the depth of the main creek during hard rains. It just didn't run so deep. Where Digman lived, you could really see it. So the group talked about how to get others in the watershed in on the plan and to get the benefits as well as to make the whole scheme work better.

This original group divided up a list of the remaining farmers in the watershed and went to see them personally. The result was a meeting at the Hiawatha School with 40 farmers present. The Hiawatha School is right at the top of the watershed.

Tommy Schuetz dragging a red oak log from his 50-acre woods.

Nick Calabresa, SCS technician, (left) and Emmanual Fuchs checking the conservation plan of Fuchs.

They organized the association at this meeting. The boundary of the watershed was outlined, some bylaws were set up, and five directors were elected.

After this election the directors met and set up a program. County Agent Myron Jeglum and SCS technician Nick Calabresa were there. So was Ken Allen, the vocational agriculture teacher, and Clarence Benkert of the Wisconsin Conservation Department. Meetings were held once a month for awhile. The SCS made an engineering review and listed the needed conservation measures on the watershed. Among other things, they learned that, in addition to the regular soil conservation programs on the farmland, some large structures were needed. These have been spotted on a map of the watershed showing their probable location. Just when and how these structures will be built has not been worked out but none of the members of the association doubts that they will be built.

Emmanual Fuchs is a beef cattleman who has a 140-acre farm along the south-central part of the watershed. Emmanual is a cooperator with the Green County Soil Conservation District and a director of the Smock Valley Watershed Association. He is still working on his waterways. He has 4 to shape and seed and has 3 of them finished. Just as Tommy Schuetz and Ken Digman had pointed out, Emmanual believed that the social part of the watershed association had as much to do with its success as any one thing. He couldn't help noticing that people work out their conservation problems together a lot easier after they get to know each other. And all this in spite of the competition from television.

The success of the Smock Valley association has been contagious. Between 20 and 30 farmers who live outside the physical boundaries of the watershed have asked to join. It appears that they will either combine their efforts or, with the help of the Smock Valley directors, will organize an association of their own.

It will be interesting to see if the watershed association will replace the threshing ring. Judging by the feeling of a lot of farmers in Green County, it already has.

A SUPERVISOR WITH A RADIO PROGRAM

By M. B. BRISSIE

"AND now here is Vernon Grant with his weekly interview," are the words of the announcer over radio station WRHI, Rock Hill, S. C., at 12:50 p.m., each Tuesday when Grant talks "shop" with outstanding soil and water conservation farmers. Grant is a supervisor of the Catawba Soil Conservation District.

Preceding this announcement, the "American Song of the Soil" has just been broadcast from a recording by three girls from nearby Winthrop College. The program has been a regular feature over WRHI for 4 years.

Vernon Grant (right) interviews W. B. Wilkerson, Jr. while a tape recording is made.

Grant usually asks leading questions to bring out some of the results the soil conservation district cooperators have achieved in applying sound soil and water conservation practices with assistance from the district. He believes that his spot on the program is good, since most farm people as well as town people are around the dinner table at the broadcast hour. Many requests for technical help have come to the local soil conservation district office after one of Grant's broadcasts.

Winthrop College students recording the "American Song of the Soil."

Once each month the radio station sends a representative with a tape recorder to one of the farming areas in the district where supervisors and Soil Conservation Service technicians have cooperated to bring in local farmers who have a story to tell about soil and water conservation. At these gatherings Grant usually prepares sufficient tapes to use during the coming month.

This program had it's beginning in 1952 when the supervisors of the District began the "Farmer of the Week," program by designating one outstanding conservation farmer each week and inviting the other farmers as well as businessmen to visit the farm during that particular week. Wednesday afternoon is designated as the time most appropriate for the visits.

Local Teamwork

A discussion of how county ASC Committees and SCD supervisors may cooperate to get more conservation for the money expended.

By THOMAS L. AYERS

THE Agricultural Conservation Program is administered nationally by the ACP Service of the USDA and in States and counties by Agricultural Stabilization and Conservation Committees. This program has a major role in Federal Government assistance to help farm people establish sound systems of soil and water management.

More than 90 percent of the farmland of the Nation is now in districts. The governing bodies of these districts have as major responsibilities the determination of (1) the kind and extent of conservation problems, (2) the needed changes in land use, and (3) the necessary conservation practices to solve the conservation and land use problems.

A program in each district shows the kind and volume of conservation practices needed to reach district objectives of proper land and water use and management. Members of district boards are also obligated under state laws to provide the leadership necessary to get the resources available for conservation work used in such a way as to make maximum annual progress toward these objectives.

The ASC Committees, together with local representatives of the Soil Conservation Service and the Forest Service, have responsibility for planning and carrying out a program of cost-sharing that will, within the limits of available funds, make it possible for those who need cost-sharing assistance to progress toward their individual conservation objectives.

The Agricultural Conservation Program cost-sharing is one of the important ways in which

Note.—The author is assistant to administrator, Agricultural Conservation Program Service, U. S. Department of Agriculture, Washington, D. C.

the public contributes toward conservation of soil and water resources within each district. There is every reason for the ASC Committees and soil conservation district governing bodies to work hand in hand. There is no conflict in their services—each definitely complements the other.

There are additional resources (credit, materials and equipment services, education and technical services, and so on) that are essential in carrying forward individual farm conservation programs. Nearly all of these necessary conservation resources are available in soil conservation districts. Private industry provides others. All persons or groups responsible for any one of these resources need to understand their relationships to each other and their dependence on each other. Maximum progress towards common conservation objectives depends on the extent to which the available resources are correlated.

County ASC Committees and soil conservation district governing bodies are finding many ways to help each other improve their services to farmers. Some mutually helpful cooperative activities that have been observed are listed below:

Things done by ASC County Committees:

1. Request district governing bodies and others having conservation responsibilities to assist them develop a program whereby conservation practices, rates of cost-sharing, and specifications for the county ACP are such as to make a maximum contribution toward solving the soil and water conservation problems of the district.
2. Develop practicable means of giving consideration to the written conservation plan of each farmer or rancher, as a basis for approving cost-sharing for needed conservation.
3. Approve cost-sharing for practices that are necessary and in keeping with the recognized priority for their application.
4. Make every effort to approve cost-sharing for conservation practices that would not otherwise be carried out in adequate amounts and approve such amounts of cost-sharing as to make it economically practical for the farmer or rancher to carry out each practice approved.
5. Assist the governing body of the district and others who control conservation resources to consider ways and means of utilizing each such resource so that maximum conservation work can be accomplished.
6. Arrange for and approve a pooling agreement wherever needed to solve a conservation problem of a community or group of farmers or ranchers.
7. Facilitate carrying out conservation practices by advancing approved cost-sharing assistance to farmers or ranchers in the form of purchase orders that may be used by them in procuring needed conservation materials or services.
8. When needed, transfer funds (not to exceed 5 percent of county allocation) to the Soil Conservation Service to help finance the technical servicing of the county ACP.
9. Make available to the local soil conservation district governing body all information available to the Committee that indicates the kind and extent of conservation problems existing in the county.
10. Assist the local soil conservation district governing body in reviewing and revising the district program as often as needed in keeping with latest research and experience.
11. Assist the educational agencies in developing and carrying out adequate conservation education programs.

Thomas L. Ayers.

12. Give due recognition in any reports, news releases, circular letters, or other public contacts to the services provided through the soil conservation district.
13. Keep the soil conservation district governing body currently informed of any problems of mutual concern and work with them to develop solutions.

Things done by soil conservation district governing bodies:

1. Bring together all available information and experience having to do with the kind and extent of conservation problems and conservation work that needs to be carried out in the district to achieve soil and water conservation on all farms and ranches.
2. Arrange for representatives of all groups having conservation responsibilities to review and, if necessary, revise the conservation program of the district in the light of latest information.
3. Determine, with the assistance of representatives as indicated in item 2, the material, equipment, technical services, and financial assistance required to attain annual conservation objectives mutually agreed on.
4. Encourage and arrange for each agency or person that controls, administers, or sells necessary conservation materials or services to be brought together for consultation as plans are being developed for use of each conservation resource.
5. Develop plans for supplementing the current supply of any conservation material or service that is inadequate.
6. Actively participate in development of the ACP by actions such as: (a) Making available pertinent information from district records; (b) appraising rate of progress and trends; (c) analyzing obstacles to progress; and (d) attending program development meetings and contributing judgment as to relative needs for cost-sharing.
7. Determine from each district cooperator his specific problems, the assistance he needs to carry out his conservation plan, and direct him to sources of help.
8. Get each district cooperator to review his program annually. Show each of them how he can speed up the attainment of his conservation objectives through use of ACP cost-sharing assistance.
9. Develop a public relations program to acquaint all district residents with the interrelationship and interdependence between the resources available to assist in carrying out conservation projects, including the ACP and other programs administered by the ASC Committees.
10. Give due recognition in the district's annual report, news releases, circular letters, and on tours and field days to the services of the ASC committees and the ACP.
11. Keep the ASC County Committee currently informed of any problems of mutual concern and work with them to develop solutions.

An increased understanding of how the ASC County Committees and soil conservation districts cooperate should result in more conservation work. That each makes a major contribution toward common objectives is evident. Many others who have conservation responsibilities can likewise contribute toward these objectives.

The various forms of conservation assistance made available to farmers through public and private resources are interdependent. For instance, many farmers will not use ACP cost-sharing assistance to install some conservation measures if they cannot get certain types of conservation material or needed technical help in its installation.

The urgency of our national conservation problems requires that all having conservation responsibilities correlate their efforts to supply and make full use of all types of conservation assistance farmers need to solve their problems.

WATERSHED TREATMENT ON FLATLAND

By HORACE P. MORGAN

NEAR Alma, in Bacon County, of southeast Georgia, is the 24,252-acre Mill Branch watershed, in what is commonly called the "flat woods" country. This is an area where the principal native vegetation is longleaf pine. This pinewoods flatland watershed is attractive to passersby and is also notable for another reason. It is 1 of 3 watersheds in Georgia that is being developed by a group of people with practically no outside financial assistance. Government aid to date has consisted largely of help in soil and water conservation practices and other technical assistance by the Soil Conservation Service through the Altamaha Soil Conservation District, and Agricultural Stabiliza-

Note.—The author is area conservationist, Soil Conservation Service, Soperton, Ga.

tion and Conservation Committee assistance on dam construction through pooling agreements.

How did it happen?

None of the landowners was informed on the technical runoff characteristics of their odd topographic watershed where there was no undulating land. The farmers did know, however, that in the spring flooding frequently damaged tobacco beds and row crops adjacent to streams. During the summer months they had been concerned with too little water. Wells went dry necessitating hauling of water from nearby Alma, by a great number of farmers.

M. E. Jones, community leader, farmer, and bank president; J. J. Jones, trade area leader; and Marcus Long, lumberman, electrical engineer, and farmer along with their neighboring sufferers, had seen enough. The too much, too little water problem had become acute by 1954. This group persuaded R. F. and R. E. Futch, and W. S. Bryant, to build Dam No. 1. The pond gate valve was closed in February 1955, and water stored to irrigate 18 acres of tobacco. These neighbors operating under a water rights agreement produced from 2,500 to 2,800 pounds of tobacco per acre (1,227 pounds, county average), which sold for a premium of 55 to 60 cents per pound.

Laying asphalt coated drain pipe (above); pouring concrete to anchor supports for riser pipe (below) on dam No. 3, Mill Branch watershed.

That did it!

M. E. Jones, who had been instrumental in inducing the original five landowners to build Dam No. 1, liked what he saw and built Dam No. 2 on his own property. It was completed in November 1955. Water from this impounded area will be used to irrigate tobacco, pasture, and corn. Stock watering, fishing, and recreation are the other uses for the ponds.

Further downstream, T. J. Lewis, Jr. and Ralph and Roy Lee completed Dam No. 3 in April 1956. SCS engineers say it should guarantee adequate water to make tobacco crops for all parties.

Immediately adjacent to Mill Branch watershed, Alvin Whitley did such a good job with still another dam constructed in 1956, that on the basis of it and other soil and water conservation practices, the Altamaha Board of Supervisors nominated Whitley for the Goodyear Award from that five-county district.

Dams 4 and 5, will be built further down the watershed in the fall of 1956 by Alton Less and C. J. Hamilton. When some difficulties in connection with land clearing and construction are solved, R. L. Floyd, Taft Johnson, and Hilton Sweat hope to begin on Dam No. 6.

When built, the dams will substantially reduce recurring water problems.

Work Unit Conservationist of SCS, Robert H. Martin, observes that, "The dams are an integral part of an overall soil and water conservation program that embraces other practices. Seeding of perennials for hay, seed, and pasture; tree planting, woodland protection, wildlife area improvement (mainly lespedeza bicolor plantings), and water management on cropland in the watershed are being applied according to the Altamaha Soil Conservation District basic plans."

Irrigation Water Management Pays

By R. L. STRONG

THE success of L. G. (Grant) Zartman, of Albuquerque, N. Mex., proves that proper management of irrigation water is one of the more important, if not the most important, conservation practice on irrigated farms.

Grant Zartman operates an 85-acre dairy farm 6 miles south of Albuquerque. His farm was chosen by the Soil Conservation Service for a demonstration of conservation practices in 1942. He became one of the first cooperators with the Tijeras Soil Conservation District when it was organized in 1945. He attributes much of his success to proper irrigation water management and other conservation practices that he has applied on his farm. His theory is that successful farming and conservation go together.

A native of Indiana, Grant came to New Mexico in 1934 and bought his present 85-acre farm. When purchased, much of the land of the farm was in trees, brush, and river dunes. Irrigation water was applied in a haphazard manner, the water being allowed to take the course of least resistance, with no regard to soil types or field layout for efficient operation.

Grant started reorganizing the farm at once and when the Soil Conservation Service offered technical assistance to farmers who would cooperate, he asked for that assistance.

Gradually, the land was cleared and the fields leveled for more efficient use of irrigation water. He learned to make his own engineering surveys for land leveling and irrigation system layouts. Though Soil Conservation Service engineers are available to help him, he prefers to do most of his own engineering. He believes that by so doing, he has a better understanding of what is to be done, thus getting a better job.

The first step towards proper application of water was to level the land already in cultivation. To accomplish this, at a cost within reason, some fields were leveled on a contour, some were benched, others were made flat. At the time the fields were leveled the ditches were laid out and built. Concrete turnouts, drops, and checks were installed to facilitate the handling of water.

Zartman began to study the water application on his fields and found that some fields were not responding as they should. When the Soil Conservation Service and Extension Service wanted to conduct irrigation trials and soil judging contests, he offered his fields for this purpose. Through these trials he realized that various soils took water differently. Grant then asked the SCS to make a detailed soil survey

Note.—The author is soil conservationist, Soil Conservation Service, Albuquerque, N. Mex.

Dairy cattle on an irrigated pasture of the Zartman farm.

of his place. After this was done he releveled some fields, and even changed the direction of the irrigation runs on others to conform to soil types, so as to get proper application of the water.

He now knows about how much water to apply and how often to irrigate each field.

Never letting a year go by without taking advantage of the Government's Agricultural Stabilization and Conservation program of assisting farmers to install conservation practices, he first leveled his land then installed the turnouts, checks, and drops. About 4 years ago he started lining with concrete about 1,000 to 1,500 feet of ditch annually. He has lined 5,450 feet of ditch and plans to complete the job by lining 1,000 feet in the spring of 1957. In addition, he has installed underground 1,280 feet of 24-inch concrete pipe. When he finishes the lining next spring, his water distribution system will be as nearly perfect as it is economically feasible to have it.

Zartman uses his land to produce feed for his herd of high producing Guernseys. He is a firm believer in irrigated pastures. The other land is in winter grains for winter pasture and corn-sorgo mixture for silage. The pastures are a mixture of orchardgrass, ladino clover, and alfalfa. During the growing season these pastures will support 3 to 4 cows per acre. Any pasture that gets ahead of the cattle is cut for hay. In cooperation with the New Mexico Extension Service and Soil Conservation Service he is running a variety test on orchardgrass. One of these strains, developed at the Soil Conservation Service nursery near Bernalillo, N. Mex., gives great promise for high production.

Experimental pasture of orchardgrass, alfalfa, and clover owned by Grant Zartman (left) with Jose Maria Pire of Spain and R. L. Strong of SCS.

Grant Zartman poses by a section of concrete lined irrigation ditch.

Using a corn-sorgo mixture his production of silage varies from 20 to 25 tons per acre. This is stored in a trench silo and fed during the winter months.

Zartman fertilizes heavily. He says that every dollar spent for fertilizers brings him 3 to 5 dollars worth of crops. He also uses large amounts of sawdust and wood shavings for bedding. This gives him sufficient manure to make a heavy application to each acre on the farm annually.

His farming operations produce summer pasture and winter silage for his Guernsey herd of 80 cows and 50 heifers. With one-third of the herd young cows, the butter fat production averaged 401 pounds per cow in 1955. His milk is sold at a premium as certified Golden Guernsey milk.

He buys most of his hay and concentrates. He does not feed concentrates heavily, believing that high quality roughage produces milk cheaper than grain feeds.

No story of Zartman's water and soil conservation accomplishments would be complete without recording his achievements in competition with other farmers in the State.

His irrigated pastures were on the Bernalillo County team of three pastures that won the award given by the National Plant Food Association in the New Mexico Farm Grasslands

program for 1952, and again in 1955. Mr. Zartman's pastures were not eligible for the competition in 1953 and 1954. Bernalillo County won the contest in 1953 without any of the first three pastures entering the competition.

In 1954, Grant won the Woodmen of The World farmer contest for New Mexico, Zone I, comprised of 16 soil conservation districts, in northwestern New Mexico.

In 1955, he won the J. D. Coggins award as best conservation farmer in New Mexico.

Zartman is a director of the Middle Rio Grande Conservancy District, and has served as community and county committeeman for the Production and Marketing Administration, county committeeman for the Farmers Home Administration, and as a 4-H club leader.

Learning While Earning

The student trainee program of SCS has helped recruit many valuable employees, who, in turn, have rendered valuable service to SCS.

By E. J. PETERSON

BILL CLAYTON of the Soil Conservation Service Work Unit office in Harrisburg, Pa., is a man with a purpose and therefore a man to watch. He just graduated from the college of Agriculture at Pennsylvania State University in January 1956. He majored in agricultural education. While Bill is a very recent graduate of college, he is somewhat an "old hand," so to speak, in the Soil Conservation Service. He is a product of the student trainee program that the SCS has had in operation since 1948. Because his story is so typical of hundreds of student trainees which the SCS has employed we'll let Bill write his story just as he told it to me.

"Mr. McClelland was my vocational agriculture teacher in my sophomore year at Trinity High School in Washington, Pa. He and Frances Bownes of the Soil Conservation Service were working together to develop interest in soil conservation projects as part of our schoolwork. My enthusiasm for this project induced Dad to become a cooperator with the Washington County Soil Conservation District. Jim, my brother, and I worked together to help Dad get a soil conservation program on our farm.

Note.—The author is chief, safety and training branch, Soil Conservation Service, Washington, D. C.

Bill Clayton (left) discussing the conservation plan for the Cleveland Brothers farm with Dick Hatcher, farm manager.

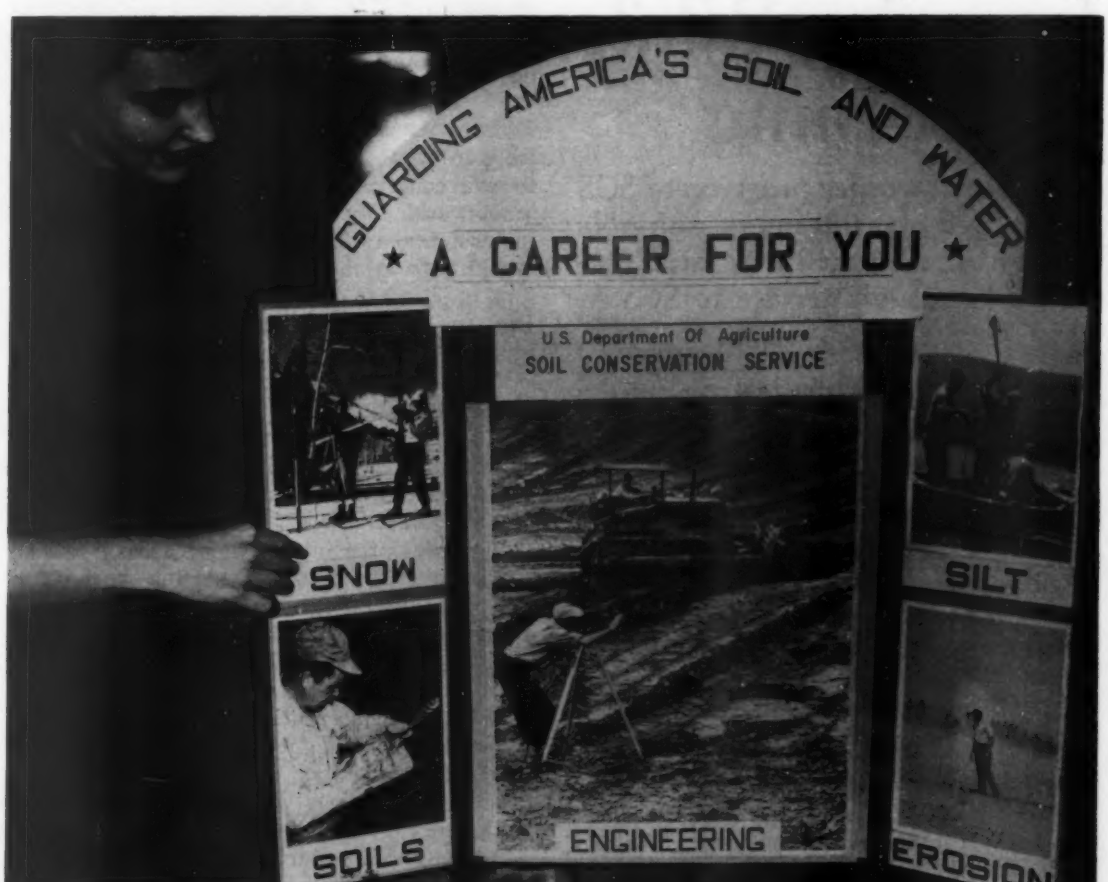
"In 1950, I decided to go to college and at that time I was fully intending to prepare myself for a teaching career in some phase of agriculture. In the spring of 1953, I noticed a Civil Service announcement for an examination for student trainees in soil conservation. I was particularly interested because it offered me an opportunity to work during the summer and earn some money. This was important since I was married and had to support a family as well as go to school. More than that, it gave me a chance to get an inside look at what a professional conservationist did on his job. I passed the exam, I got a job, and was assigned in my home county.

"Bill Fennell, our work unit conservationist in the district, really 'put me through the paces' —not only that summer but the next two summers as well. During my three summers with the Soil Conservation Service I was trained in

laying out soil conservation practices such as diversion terraces, tile and open ditch drainage, stripcropping, terracing, and other practices. I worked with the soil surveyor to make conservation survey maps. During the summer of 1955, I had an opportunity to help do some farm planning, working closely with the work unit conservationist. Of course, all the way through these experiences I was learning about the policies and procedures of the Service and its basic philosophy and objectives. Also, I learned to know a lot of people in the Service. What's more I liked them, and what they believed, and how they are dedicated to their work. Now I'm going through a process of further training and looking forward to a long and successful career in the Soil Conservation Service.

"Since you asked me what I thought of the student trainee idea, let me give you my feelings. If it hadn't been for this program, I might never have worked for the Soil Conservation Service because that wasn't what I had in mind when I started to college. After my first summer's work, I got a little more practical slant on the courses I ought to take to qualify for SCS work. For example, I took courses in geology, agronomy, physical geography, and soil conservation that were not in my scheduled course. What's more, I got a very realistic view of what a soil conservationist did in the field—and I like it—like it so well in fact that I've decided on it as a career.

"I know too that you will appreciate this point during these days when it is hard to recruit the people you need. I can honestly say



Judith Merrick inspects a SCS recruiting poster.

These students of Drexel Institute of Technology (Philadelphia) learn about soil conservation while employed by SCS at the Upper Darby, Pa. office, (left to right) Ray Cline, Judith Merrick, and Stanley Witynski.

that there are about a dozen people from Penn State University who are now working for SCS whom I steered to your personnel office. When I came back after a summer's work I'd tell the men about my experience and they would apply and get appointed. The idea of earning while learning during the college years is a good deal for most college students. On the basis of my experience I'd highly recommend it to any college student."

Frederick B. Walter, a civil engineering student from Montana State College at Bozeman is another employee who came to SCS as a student trainee. He has this to say. "Now, after two summers in a work unit office, I can say that I am familiar with nearly every phase of the SCS as well as the soil conservation district programs. The most important part of my training has been the overall impression I got of the types of work involved and the personal satisfaction the work has given me. Though most of my field training has been in engineering, I have also been introduced to such activities as soil surveying, farm planning, and range management. Soon my trainee period will be over. If I decide on a job with SCS, it will be because I know the job and like it."

Adger B. Carroll, a Clemson College student who was with SCS during the summer of 1955 had this to say about his experience. "My work this summer has meant more to me than just a job to pass the summer. It has been work that impressed me with not only the value of local leadership through district supervisors, but gave me an idea of the wonderful opportunity for farmers in obtaining assistance in conserving the fertile soil that is so vital to the American people. Tremendous amounts of valuable soil can be saved for there are great possibilities for making productive again the wasted or mistreated land which is not being managed according to its capabilities."

The Service's experience with the student trainee program has been a very successful venture in the field of recruiting and training career employees. Since 1948 the SCS has employed more than 1,000 student trainees throughout the Nation, many of whom are now with the Service as permanent employees.

We are hoping to expand and encourage this program further as part of a long range personnel program so that we can get career employees while they are still in college. We can provide intensive training on the job and counsel with the trainees on their courses of study when they return to college each fall.

A PROFITABLE TREE CROP.—In 1940, "Arl" Hildebrand of Prescott, Ark. was tempted to have his 8 acres of pine timber clear cut. At that time he had 3,000 board-feet per acre of 9" stagnated trees and the $300 it would bring was very tempting. Instead, he was persuaded by SCS technicians to selectively cut the 8-acre stand. He is not sorry that he did. The stand was marked and cut in 1940, 1945, and 1950. In the 10-year period Hildebrand harvested $100 off each acre and has added $120 per acre to capital stock (the increase in growth his trees have made since he started improving his woodland).

In 1955, Hildebrand marked, cut, and hauled his logs to the mill. He netted $850 from the 8 acres, a profit of nearly $110 per acre in the last 5-year period, or $22 per acre per year. The best part is that he has more timber now and it is in better shape than when he started in 1940. Each acre is now worth more than $300.

FROM COTTON TO PINE.—Jane Ross, daughter of the late Hugh Ross of Arkadelphia, Ark., reports that her father planted to shortleaf pine a 30-acre wornout and abandoned cottonfield. Ten years later the stand was thinned and produced 12 cords of pulpwood per acre. Four years later the stand was thinned again and yielded 8 cords of pulwood per acre. This means that during the 14 years after it was planted, the woods yielded 20 cords of pulpwood per acre that brought in a total a total of $73 per acre, or $5.22 per acre per year for the 14 years.

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ANCIENT LOBLOLLY.—Rings on this section of a Louisiana loblolly pine shows it started growth as a seedling in 1803, the year of the Louisiana Purchase. Linton Jones, SCS technician in Jackson Parish, La., indicates the point where growth began. The white strips above indicate growth points at other historic events during the life of the tree. These include: War of 1812; first steam locomotive, 1830; Mexican War, 1846; California Gold Rush, 1849; War Between the States, 1861; invention of electric light, 1879; Spanish American War, 1898; World War I, 1917; Pearl Harbor, 1941. The 145-year-old tree was cut in September 1948 by George Toms. The merchantable length was 56 feet, and contained 3,016 board feet of timber. Diameter at breast height was 48 inches. The lumber sold for $99.52.